F.V. Anita J. Gulf of Alaska Salmon Survey, March 25 - April 9, 1995

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F.V. ANITA J. GULF OF ALASKA SALMON SURVEY, MARCH 25 - APRIL 9, 1995

by

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ABSTRACT

Welch, D. W., J. F. T. Morris, E. Demers, and H. R. Carlson. 2002. *F.V. Anita J.* Gulf of Alaska salmon survey, March 25 - April 9, 1995. Can. Data Rep. Fish. Aquat. Sci. 1097: 19 p.

Fisheries and Oceans Canada chartered the *F.V. Anita J.*, a US commercial dragger, to conduct a survey of Pacific salmon (*Oncorhynchus spp.*) in the Gulf of Alaska from March 25 to April 9, 1995. This survey was designed to determine the thermal limits that demarcate the southern boundaries of Pacific salmon distributions, and to supplement the sparse set of information on salmon distributions, biology and ecology in the eastern North Pacific in the spring.

Overall, salmon catches were low and irregular. A total of 241 Pacific salmon were caught on the survey, of which 55 were pink salmon (*O. gorbuscha*) and 149 were chum salmon (*O. keta*) completing their first ocean year (i.e., entered the ocean during 1994). All salmon were caught north of the 10.2°C isotherm.

RESUME

Welch, D. W., J. F. T. Morris, E. Demers, and H. R. Carlson. 2002. *F.V. Anita J.* Gulf of Alaska salmon survey, March 25 - April 9, 1995. Can. Data Rep. Fish. Aquat. Sci. 1097: 19 p.

Le ministère des Pêches et Océans Canada a affrété le F.V. Anita J., un dragueur commercial américain, pour mener une étude sur les saumons du Pacifique (Oncorhynchus spp.) dans le Golfe de l'Alaska entre le 25 mars et le 9 avril 1995. Cette étude a été conçue pour déterminer les limites thermiques qui démarquent la frontière sud de la distribution des saumons, et pour augmenter les données clairsemées sur la distribution, la biologie et l'écologie des saumon dans l'est du Pacifique Nord durant le printemps.

Dans l'ensemble, les captures de saumon étaient faibles et irrégulières. Un total de 241 saumons du Pacifique ont été capturés durant cette étude, dont 55 saumons roses (O. gorbuscha) et 149 saumons kétas (O. keta) qui complétaient leur première année dans l'océan (i.e. qu'ils étaient entrés dans l'océan en 1994). Tous les saumons ont été capturés au nord de l'isotherme de 10.2°C.

INTRODUCTION

Fisheries and Oceans Canada's Highseas Salmon program chartered a US commercial dragger, *F.V. Anita J.*, to conduct a survey of Pacific salmon (*Oncorhynchus spp.*) in the Gulf of Alaska from March 25 to April 9, 1995. This survey was designed to determine the thermal limits that demarcate the southern boundaries of salmon distributions, and to supplement the sparse set of information on salmon distributions, biology and ecology in the eastern North Pacific in the spring.

MATERIALS AND METHODS

General Survey Information

Figure 1 shows the cruise track of the F.V. Anita J. and the fish, zooplankton and oceanographic sampling stations. The survey consisted of the following continuous transects:

a) an east to west transect along the 50°N parallel from 135° to 145°W longitude;
b) a northwest to southeast transect from 50°N, 145°W to 40°N, 135°W;
c) a short south to north transect from 40°N, 135°W to 44°N, 134°W;
d) a short northwest to southeast transect from 44°N, 134°W to 43°N, 132°W;
e) a south to north transect from 43°N, 132°W to 49°N, 131°W; and,
f) a short west to east transect along the 49°N parallel from 131° to 129°W longitude.

A total of 44 fishing tows, 53 oceanographic stations and 12 zooplankton net tows (bongo) were completed (Figure 1).

Fishing Gear and Fishing Operations

Fish sampling was conducted during daytime with a model 400/580 mid-water trawl, manufactured by Cantrawl Pacific Fishing Services Ltd., Richmond, B.C. The mid-water trawl was made up of a front-end section of hexagonal mesh, a 100 m long body with meshes tapering down from 163 cm (64 in) to 10.2 cm (4 in), an intermediate section of 3.5 in (8.9 cm) web, and a nylon-knotted codend of 1.5 in (3.8 cm) which was lined with a 0.25 in (6.4 mm) mesh.

The trawl was deployed within 5 m of the surface with an estimated mouth opening of 24 m horizontal by 16 m vertical. Calculated speeds over ground (SOG) for fishing tows ranged from 3 to 6 knots (1.5 to 3.1 m s^{-1}) for 1 to 1.5 hours.

Oceanographic Sampling

At all oceanographic and fishing stations, the scientific crew conducted CTD (conductivity-temperature-depth) casts and collected surface seawater samples for subsequent measurement of nitrate, phosphate, silicate, and salinity. CTD casts were

conducted to depths between 300 and 400 m with a portable Seabird CTD, model SBE-19 (Serial # 1031). Nitrate and phosphate samples were collected in acid-washed glass test tubes and stored frozen. Silicate samples were collected in acid-washed plastic test tubes and also stored frozen.

Zooplankton Sampling

Oblique bongo tows to approximately 500 m were conducted at night with two 57 cm diameter, 253 μm Nitex nets. One of the two nets was equipped with a flow meter. Standard sampling protocol was followed and consisted of a 0.3m s^{-1} net retrieval speed while towing at 2 knots (1.0 m s^{-1}) after reaching the target depth. Bongo tows were completed within 20 minutes from the time of deployment.

Zooplankton taken from the net with the flow meter were sorted into four size fractions by successively sieving through 8.0, 1.7, 1.0, and 0.25 mm screens. In the laboratory, the size fractions were weighed wet, dried at 60°C for 48 hours, re-weighed, and stored in plastic bags for future $\delta^{14}C$ and $\delta^{15}N$ isotope analyses.

Zooplankton from the other net were preserved in 10% formalin and sent to the zooplankton laboratory at the Institute of Ocean Sciences, Fisheries and Oceans Canada (Sidney, BC) for species classification and enumeration.

RESULTS

Salmon Catch Data

Table 1 reports information on trawl tows and a summary of salmon catches for the survey. Tow information includes: station ID, date and time recorded in Pacific Standard Time (PST), sampling region, start and end latitude (°N) and longitude (°W), duration (h), distance travelled (km), towing speed (sog; speed over ground in knots), heading (T°; degrees true), and sea surface temperature (SST; °C) that was taken from the processed CTD files. For each tow, catch totals are provided for chinook (CK), chum (CM), coho (CO), pink (PK) and sockeye salmon (SE).

Station ID numbers in Table 1 consisted of the Pacific Biological Station cruise designation ("HS0395" for this cruise, where HS stands for Highseas), followed by a consecutive tow number on the survey (from 1 to 44). The station ID number serves as the primary key in the Highseas salmon database that links fishing tow information with the oceanographic and zooplankton tables.

Catches of Pacific salmon were low and irregular during this survey. A total of 241 salmon were caught on the survey and all were caught north of the 10.2°C isotherm.

Pink salmon – A total of 55 pink salmon (*O. gorbuscha*) were caught (Table 1; Figure 2a), ranging in fork length from 282 to 393 mm (Figure 3). Of these, nearly 50% were caught at stations 38 to 41 on the most eastern south to north transect.

Chum salmon – A total of 162 chum salmon (*O. keta*) were caught (Table 1; Figure 2b), ranging in fork length from 255 to 500 mm (Figure 3). Most chum salmon were caught at stations 38 to 41.

Sockeye salmon – A total of 22 sockeye salmon (*O. nerka*) were caught at stations 4 and 17 (Table 1; Figure 2c), ranging in fork length form 295 to 460 mm (Figure 3).

Coho salmon – Two coho salmon (*O. kisutch*) were caught on the survey (Table 1; Figure 2d).

Chinook salmon – No chinook salmon (*O. tshawytscha*) were caught during this survey.

Salmon Biological Data

Table 2 reports the detailed biological data collected from each salmon caught on the survey. Individual salmon were assigned a fish number which consisted of the cruise identifier "HS0395", followed hierarchically by tow number, species code, and sample number. For example, "HS0395-004-112-001" refers to tow number 4, species code "112" for chum salmon, and the sample number "1" (within tow and species). We used the following codes from Fisheries and Oceans' Salmon Stock Assessment database: 108, pink salmon; 112, chum salmon; 115, coho salmon; 118, sockeye salmon; and 124, chinook salmon. The station ID number indicating the consecutive tow in which each salmon was caught is also included in Table 2.

Biological data collected for each salmon includes (when available): species common name, fork length (mm), body weight (g wet), age, sex, gonad weight (g wet), stomach content (g wet), and a visual description of stomach contents.

Table 2 has the following blocks of fish records where information is not available:

- HS0395-040-112-120 to HS0395-040-112-141 – chum salmon were kept frozen whole for future biochemical sampling, so there is no information on sex, gonad weight, stomach content weight, and stomach content descriptions.

- HS0395-004-118-014 to HS0395-004-118-021 – sockeye salmon were kept frozen whole for future biochemical sampling, so there is no information on sex, gonad weight, stomach content weight, and stomach content descriptions.

- HS0395-017-108-023 to HS0395-017-108-050 – pink salmon that were swept overboard before the scientific staff had a chance to sample them, so there is no biological information at all.

Oceanographic Data

Table 3 reports the physical oceanographic data collected on the survey including the station ID number, the Institute of Ocean Sciences' consecutive number for the CTD cast, sampling region, the date and time in UTC, the latitude (°N) and longitude (°W), sea surface temperature (SST) in °C taken from the processed CTD files, sea surface salinity (SSS) in ppt taken from the CTD files, sea surface salinities in ppt determined from the sample bottles that were used to calibrate the CTD probe, and nitrate, silicate, and phosphate concentrations in micromoles per litre (μmol L^{-1}). The CTD consecutive number consists of the Institute of Ocean Sciences' cruise designation "9511" followed by the consecutive number for each CTD cast on this survey. Since the CTD and fishing consecutive number series were independent, some of the stations where CTD and bongo tows, but no fishing tows were conducted, were given the designation "HS0395-CTD-" followed by a number derived from the CTD consecutive number.

The CTD files can be obtained from Joe Linguanti, Ocean Sciences & Productivity Division, Department of Fisheries and Oceans, Institute of Ocean Sciences, 9860 West Saanich Rd, Sidney, BC, Canada V8L 4B2. Tel: (250) 363-6586; E-mail: linguantij@pac.dfo-mpo.gc.ca.

Zooplankton Data

Table 4 presents the zooplankton data collected from the bongo tows on the survey including the station ID number, the Institute of Ocean Sciences' consecutive number for the CTD cast, the date, latitude (°N) and longitude (°W), bottom depth (m), target depth (m), start and end time of tow (PST), tow duration, wire angle (degrees), amount of wire deployed off the winch drum (m), and volume of ocean water sampled in cubic meters. The dry weights (g) of zooplankton from the net with the flow meter were standardized to 1,000 cubic meters sampled for the 8.0, 1.7, 1.0, and 0.25 mm size factions as well as for the total sample.

The bongo tows took 14 to 18 minutes to complete, except at station HS0395-CTD-10, where the wire was snagged on the winch drum during retrieval, and the net was held up and towed at a depth of 165 m for an additional 25 minutes. The resulting tow duration was 41 minutes.

Table 4 has the following blocks of zooplankton records where information is not available:

- HS0395-CTD-41 – no dry weights of zooplankton are available at this stations since one of the nets ripped just above the codend cup and the sample was lost.

However, the sample from the other net in this case was preserved in formalin and analysed.

- HS0395-CTD-45 and HS0395-CTD-49 – the zooplankton samples from these stations were lost in storage.

Zooplankton samples from the non-flow meter net from all these tows were preserved in 10% formalin. Information on the species composition from these tows can be obtained by contacting David Mackas, Ocean Sciences & Productivity Division, Department of Fisheries and Oceans, Institute of Ocean Sciences, 9860 West Saanich Rd, Sidney, BC, Canada V8L 4B2. Tel: (250) 363-6442; E-mail: Mackasd@pac.dfo-mpo.gc.ca.

Table 1. Tow positions and catch summaries of salmon for the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Station ID	Date	Time PST	Region	Start Latitude (°N)	Start Longitude (°W)	End Latitude (°N)	End Longitude (°W)	Tow Duration	Tow Length (km)	SOG (kts)	Heading (°T)	SST (°C)	CK	CM	CO	PK	SE
HS0395-1	25-Mar-95	11:17	Offshore	50.648	134.318	50.703	134.283	1:07	3.56	3.14	022	N/A	0	0	0	0	0
HS0395-2	25-Mar-95	16:13	Offshore	50.658	134.863	50.670	134.982	1:07	4.59	4.11	279	6.67	0	0	0	0	0
HS0395-3	26-Mar-95	09:17	Offshore	50.415	138.398	50.420	138.543	1:04	5.56	5.13	273	6.67	0	0	0	0	0
HS0395-4	26-Mar-95	14:00	Offshore	50.397	139.262	50.413	139.400	1:04	5.37	4.96	280	6.68	0	2	0	5	14
HS0395-5	26-Mar-95	19:20	Offshore	50.398	140.110	50.412	140.195	1:01	3.36	3.25	285	6.54	0	0	0	1	0
HS0395-6	27-Mar-95	09:10	Offshore	50.265	142.527	50.302	142.615	1:01	4.04	3.91	303	6.19	0	0	0	0	0
HS0395-7	27-Mar-95	14:35	Offshore	50.280	143.122	50.208	143.113	1:15	4.34	3.47	175	5.77	0	0	0	0	0
HS0395-8	27-Mar-95	18:05	Offshore	50.197	143.428	50.152	143.585	1:10	6.61	5.67	246	5.78	0	0	0	0	0
HS0395-9	28-Mar-95	09:55	Offshore	50.125	145.828	50.105	145.712	1:00	4.63	4.63	105	5.45	0	0	0	0	0
HS0395-10	28-Mar-95	13:10	Offshore	50.013	145.217	50.000	145.000	2:30	8.41	3.36	095	5.68	0	0	0	0	0
HS0395-11	28-Mar-95	18:50	Offshore	49.802	144.960	49.725	144.995	1:04	4.82	4.45	196	5.71	0	0	0	0	0
HS0395-12	29-Mar-95	08:30	Offshore	49.060	144.480	49.075	144.357	1:19	4.92	3.70	079	6.28	0	0	0	0	0
HS0395-13	29-Mar-95	15:15	Offshore	48.638	144.302	48.587	144.215	1:13	4.62	3.80	132	6.50	0	0	0	0	0
HS0395-14	29-Mar-95	17:55	Offshore	48.490	144.027	48.447	143.927	1:10	4.75	4.07	123	6.62	0	0	0	0	0
HS0395-15	30-Mar-95	08:30	Offshore	47.202	143.437	47.195	143.323	1:19	4.67	3.51	095	7.28	0	0	0	0	0
HS0395-16	30-Mar-95	14:15	Offshore	46.878	142.797	46.898	142.632	1:19	6.88	5.17	080	7.58	0	0	0	0	0
HS0395-17	30-Mar-95	19:00	Offshore	46.703	142.245	46.655	142.212	0:49	3.19	3.83	155	7.43	0	8	2	10	8
HS0395-18	01-Apr-95	09:15	Offshore	44.790	140.262	44.737	140.202	1:04	4.08	3.77	141	8.92	0	0	0	1	0
HS0395-19	01-Apr-95	13:55	Offshore	44.512	139.830	44.458	139.728	1:15	5.44	4.35	127	9.37	0	0	0	0	0
HS0395-20	01-Apr-95	18:04	Offshore	44.242	139.390	44.190	139.277	1:21	5.78	4.28	123	9.39	0	0	0	0	0
HS0395-21	02-Apr-95	07:55	Offshore	43.282	137.962	43.298	137.845	1:04	5.20	4.80	079	9.81	0	0	0	1	0
HS0395-22	02-Apr-95	13:15	Offshore	43.755	137.582	43.725	137.480	0:57	4.78	5.03	112	N/A	0	0	0	0	0
HS0395-23	03-Apr-95	09:10	Offshore	42.907	136.448	42.838	136.395	0:55	4.75	5.19	151	10.44	0	0	0	0	0
HS0395-24	03-Apr-95	13:20	Offshore	42.505	136.102	42.445	136.040	1:03	4.53	4.31	143	10.53	0	0	0	0	0
HS0395-25	03-Apr-95	18:15	Offshore	41.983	135.770	41.898	135.705	1:15	5.87	4.70	150	10.46	0	0	0	0	0
HS0395-26	04-Apr-95	08:15	Offshore	40.042	135.405	39.972	135.385	1:10	4.30	3.69	168	12.83	0	0	0	0	0
HS0395-27	04-Apr-95	13:14	Offshore	40.403	135.177	40.478	135.132	1:04	4.95	4.57	025	11.63	0	0	0	0	0
HS0395-28	04-Apr-95	17:25	Offshore	40.850	135.012	40.927	135.003	1:13	4.64	3.82	005	11.49	0	0	0	0	0
HS0395-29	05-Apr-95	08:00	Offshore	42.735	134.772	42.832	134.792	1:00	5.89	5.89	351	10.15	0	0	0	3	0
HS0395-30	05-Apr-95	13:00	Offshore	43.272	134.747	43.343	134.735	1:04	4.30	3.97	007	10.20	0	0	0	7	0
HS0395-31	05-Apr-95	17:20	Offshore	43.752	134.732	43.842	134.737	1:15	5.41	4.33	358	10.13	0	0	0	0	0
HS0395-32	06-Apr-95	08:15	Offshore	42.633	132.975	42.607	132.878	1:04	4.56	4.21	110	10.99	0	0	0	0	0

Table 1. Tow positions and catch summaries of salmon for the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Station ID	Date	Time PST	Region	Start Latitude (°N)	Start Longitude (°W)	End Latitude (°N)	End Longitude (°W)	Tow Duration	Tow Length (km)	SOG (kts)	Heading (°T)	SST (°C)	CK	CM	CO	PK	SE
HS0395-33	06-Apr-95	13:15	Offshore	42.295	132.413	42.245	132.328	1:10	4.82	4.14	128	11.19	0	0	0	0	0
HS0395-34	06-Apr-95	17:45	Offshore	42.637	132.088	42.728	132.025	1:30	6.13	4.09	027	10.40	0	0	0	0	0
HS0395-35	07-Apr-95	08:20	Offshore	44.530	131.878	44.627	131.875	1:30	5.83	3.88	001	9.79	0	0	0	0	0
HS0395-36	07-Apr-95	11:55	Offshore	44.795	131.867	44.860	131.853	1:03	3.95	3.76	009	9.99	0	0	0	0	0
HS0395-37	07-Apr-95	17:30	Offshore	45.338	131.932	45.410	131.930	1:09	4.32	3.76	001	9.39	0	0	0	0	0
HS0395-38	08-Apr-95	09:10	Offshore	46.687	130.908	46.722	131.027	1:15	5.33	4.23	293	8.96	0	15	0	10	0
HS0395-39	08-Apr-95	14:15	Offshore	47.155	131.105	47.255	131.108	1:19	6.01	4.52	359	8.22	0	2	0	3	0
HS0395-40	08-Apr-95	18:00	Offshore	47.517	131.100	47.607	131.072	1:15	5.52	4.38	012	8.22	0	133	0	13	0
HS0395-41	09-Apr-95	07:45	Offshore	48.940	131.187	49.042	131.185	1:19	6.13	4.61	001	7.88	0	2	0	1	0
HS0395-42	09-Apr-95	11:12	Offshore	49.048	130.913	49.035	130.767	1:03	5.80	5.52	098	8.22	0	0	0	0	0
HS0395-43	09-Apr-95	14:55	Offshore	49.035	130.363	49.048	130.245	1:07	4.71	4.16	080	8.87	0	0	0	0	0
HS0395-44	09-Apr-95	18:00	Offshore	49.060	130.003	49.087	129.907	1:07	4.11	3.68	067	8.86	0	0	0	0	0
												Totals:	0	162	2	55	22
													Overall total:				241

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-004-112-001	HS0395-4	CHUM	428	855.5	0.2	F	1.5	1.9	N/A
HS0395-004-112-002	HS0395-4	CHUM	442	943.5	0.2	M	0	4.9	N/A
HS0395-017-112-024	HS0395-17	CHUM	401	597.5	0.2	M	N/A	N/A	N/A
HS0395-017-112-026	HS0395-17	CHUM	431	791.0	0.2	F	N/A	18.91	unidentified gelatinous material
HS0395-017-112-027	HS0395-17	CHUM	450	810.5	9.9	F	N/A	N/A	N/A
HS0395-017-112-028	HS0395-17	CHUM	494	1015.0	0.4	M	N/A	8.11	unidentified gelatinous material, amphipod remains
HS0395-017-112-029	HS0395-17	CHUM	364	511.0	9.9	F	N/A	N/A	N/A
HS0395-017-112-030	HS0395-17	CHUM	440	996.0	0.2	M	N/A	3.21	unidentified gelatinous material
HS0395-017-112-031	HS0395-17	CHUM	373	562.0	0.2	M	N/A	7.59	unidentified gelatinous material
HS0395-017-112-033	HS0395-17	CHUM	404	715.0	0.2	M	N/A	2.58	unidentified gelatinous material
HS0395-038-112-070	HS0395-38	CHUM	305	245.0	0.1	M	0	0.7	unidentified gelatinous material
HS0395-038-112-072	HS0395-38	CHUM	301	262.5	0.1	F	0.4	4.9	unidentified gelatinous material
HS0395-038-112-073	HS0395-38	CHUM	279	207.5	0.1	M	0	1.9	unidentified gelatinous material
HS0395-038-112-074	HS0395-38	CHUM	290	244.5	0.1	F	0.4	2.9	unidentified gelatinous material
HS0395-038-112-075	HS0395-38	CHUM	267	183.5	0.1	F	0.4	1.5	unidentified gelatinous material
HS0395-038-112-076	HS0395-38	CHUM	296	247.5	0.1	F	0.4	1.9	unidentified gelatinous material
HS0395-038-112-078	HS0395-38	CHUM	282	198.0	0.1	F	0.3	1.9	unidentified gelatinous material
HS0395-038-112-080	HS0395-38	CHUM	298	259.5	0.1	M	0	2.1	unidentified gelatinous material
HS0395-038-112-081	HS0395-38	CHUM	500	1189.0	0.3	M	0.5	7.8	unidentified gelatinous material
HS0395-038-112-082	HS0395-38	CHUM	455	930.5	0.2	M	0	14.6	unidentified gelatinous material
HS0395-038-112-083	HS0395-38	CHUM	318	333.0	0.1	M	0	1.6	unidentified gelatinous material
HS0395-038-112-084	HS0395-38	CHUM	285	219.0	0.1	M	0	2.8	unidentified gelatinous material
HS0395-038-112-085	HS0395-38	CHUM	322	327.0	0.1	F	1	4.1	unidentified gelatinous material
HS0395-038-112-086	HS0395-38	CHUM	272	179.5	0.1	F	0.2	1.6	unidentified gelatinous material
HS0395-038-112-087	HS0395-38	CHUM	284	228.0	0.1	M	0	3	unidentified gelatinous material
HS0395-039-112-091	HS0395-39	CHUM	442	891.5	N/A	M	0	8.3	unidentified gelatinous material
HS0395-039-112-092	HS0395-39	CHUM	438	809.0	N/A	M	0	5.6	unidentified gelatinous material
HS0395-040-112-106	HS0395-40	CHUM	288	257.0	0.1	F	0.3	3.8	unidentified gelatinous material
HS0395-040-112-107	HS0395-40	CHUM	284	256.5	0.1	F	0.4	11	unidentified material, trace amphipod remains
HS0395-040-112-108	HS0395-40	CHUM	270	204.5	0.1	M	0	4.2	unidentified gelatinous material
HS0395-040-112-109	HS0395-40	CHUM	286	240.5	0.1	F	0.4	7.7	unidentified gelatinous material
HS0395-040-112-110	HS0395-40	CHUM	302	234.5	0.1	F	0.2	1.2	unidentified gelatinous material
HS0395-040-112-111	HS0395-40	CHUM	314	310.5	0.1	F	0.7	2	unidentified gelatinous material
HS0395-040-112-112	HS0395-40	CHUM	326	335.0	N/A	F	1.1	0	N/A
HS0395-040-112-113	HS0395-40	CHUM	301	274.0	N/A	F	0	0	N/A
HS0395-040-112-114	HS0395-40	CHUM	298	254.5	N/A	M	0	0	N/A
HS0395-040-112-115	HS0395-40	CHUM	300	264.5	0.1	F	0	0.7	unidentified gelatinous material
HS0395-040-112-116	HS0395-40	CHUM	302	266.5	N/A	F	0.4	0	
HS0395-040-112-117	HS0395-40	CHUM	300	262.0	0.1	F	0.4	1	unidentified gelatinous material
HS0395-040-112-118	HS0395-40	CHUM	285	216.0	N/A	M	0	0	
HS0395-040-112-119	HS0395-40	CHUM	269	189.0	N/A	M	0	0	
HS0395-040-112-120	HS0395-40	CHUM	289	264.0	0.1	N/A	N/A	N/A	N/A

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-040-112-121	HS0395-40	CHUM	294	263.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-122	HS0395-40	CHUM	284	279.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-123	HS0395-40	CHUM	304	305.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-124	HS0395-40	CHUM	300	297.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-125	HS0395-40	CHUM	290	277.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-126	HS0395-40	CHUM	281	249.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-127	HS0395-40	CHUM	273	252.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-128	HS0395-40	CHUM	311	331.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-129	HS0395-40	CHUM	309	319.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-130	HS0395-40	CHUM	290	251.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-131	HS0395-40	CHUM	287	258.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-132	HS0395-40	CHUM	315	366.5	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-133	HS0395-40	CHUM	277	225.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-134	HS0395-40	CHUM	284	258.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-135	HS0395-40	CHUM	287	253.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-136	HS0395-40	CHUM	315	324.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-137	HS0395-40	CHUM	266	216.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-138	HS0395-40	CHUM	314	324.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-139	HS0395-40	CHUM	282	243.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-140	HS0395-40	CHUM	269	213.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-141	HS0395-40	CHUM	280	231.0	0.1	N/A	N/A	N/A	N/A
HS0395-040-112-142	HS0395-40	CHUM	310	335.5	0.1	M	0	6.2	unidentified gelatinous material
HS0395-040-112-143	HS0395-40	CHUM	297	287.0	0.1	M	0	4.4	unidentified gelatinous material
HS0395-040-112-144	HS0395-40	CHUM	298	279.5	0.1	M	0	6.8	unidentified gelatinous material
HS0395-040-112-145	HS0395-40	CHUM	281	240.0	0.1	M	0	5	unidentified gelatinous material
HS0395-040-112-146	HS0395-40	CHUM	318	346.0	0.1	M	0	4.5	unidentified gelatinous material
HS0395-040-112-147	HS0395-40	CHUM	271	321.0	0.1	M	0	7.5	unidentified gelatinous material
HS0395-040-112-148	HS0395-40	CHUM	298	310.0	0.1	M	0	5.6	unidentified gelatinous material
HS0395-040-112-149	HS0395-40	CHUM	287	262.5	0.1	M	0	3.8	unidentified gelatinous material
HS0395-040-112-150	HS0395-40	CHUM	286	266.0	0.1	M	0	6.4	unidentified gelatinous material
HS0395-040-112-151	HS0395-40	CHUM	294	279.0	0.1	F	0.3	3.4	unidentified gelatinous material
HS0395-040-112-152	HS0395-40	CHUM	285	271.0	0.1	M	0	5.4	unidentified gelatinous material
HS0395-040-112-153	HS0395-40	CHUM	284	258.5	0.1	F	0.5	4.9	unidentified gelatinous material
HS0395-040-112-154	HS0395-40	CHUM	287	262.5	0.1	M	0	5	unidentified gelatinous material
HS0395-040-112-155	HS0395-40	CHUM	293	267.5	0.1	M	0	5.9	unidentified gelatinous material
HS0395-040-112-156	HS0395-40	CHUM	278	263.0	0.1	F	0.1	5	unidentified gelatinous material
HS0395-040-112-157	HS0395-40	CHUM	268	216.0	0.1	F	0.3	6.5	unidentified gelatinous material
HS0395-040-112-158	HS0395-40	CHUM	306	291.5	0.1	F	0.5	3.1	unidentified gelatinous material
HS0395-040-112-159	HS0395-40	CHUM	280	242.0	0.1	M	0	5.5	unidentified gelatinous material
HS0395-040-112-160	HS0395-40	CHUM	279	224.5	0.1	F	0.3	3.7	unidentified gelatinous material
HS0395-040-112-161	HS0395-40	CHUM	294	254.5	0.1	M	0	5.1	unidentified gelatinous material
HS0395-040-112-162	HS0395-40	CHUM	322	281.5	0.1	M	0	7.4	unidentified gelatinous material

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-040-112-163	HS0395-40	CHUM	308	324.5	0.1	F	0.5	7.2	unidentified gelatinous material
HS0395-040-112-164	HS0395-40	CHUM	280	224.5	0.1	M	0	4.2	unidentified gelatinous material
HS0395-040-112-165	HS0395-40	CHUM	285	251.0	0.1	F	0.3	5.1	unidentified gelatinous material
HS0395-040-112-166	HS0395-40	CHUM	280	244.5	0.1	F	0.2	3.4	unidentified gelatinous material
HS0395-040-112-167	HS0395-40	CHUM	288	287.5	0.1	M	0	6.4	unidentified gelatinous material
HS0395-040-112-168	HS0395-40	CHUM	280	239.5	0.1	F	0.3	5.6	unidentified gelatinous material
HS0395-040-112-169	HS0395-40	CHUM	267	203.5	0.1	F	0.3	4.2	unidentified gelatinous material
HS0395-040-112-170	HS0395-40	CHUM	287	244.5	0.1	F	0.4	5	unidentified gelatinous material
HS0395-040-112-171	HS0395-40	CHUM	284	257.5	0.1	M	0	2.8	unidentified gelatinous material
HS0395-040-112-172	HS0395-40	CHUM	272	217.0	0.1	M	0	5.2	unidentified gelatinous material
HS0395-040-112-173	HS0395-40	CHUM	278	229.0	0.1	F	0.2	6.7	unidentified gelatinous material
HS0395-040-112-174	HS0395-40	CHUM	312	321.0	0.1	F	0.5	3.8	unidentified gelatinous material
HS0395-040-112-175	HS0395-40	CHUM	287	230.5	0.1	M	0	3.8	unidentified gelatinous material
HS0395-040-112-176	HS0395-40	CHUM	277	229.5	0.1	F	0.2	8	unidentified gelatinous material
HS0395-040-112-177	HS0395-40	CHUM	281	237.0	0.1	F	0.4	4.7	unidentified gelatinous material
HS0395-040-112-178	HS0395-40	CHUM	300	343.0	0.1	F	0.8	6.6	unidentified gelatinous material
HS0395-040-112-179	HS0395-40	CHUM	298	312.0	0.1	M	0	5.8	unidentified gelatinous material
HS0395-040-112-180	HS0395-40	CHUM	302	321.5	0.1	M	0	5.7	unidentified gelatinous material
HS0395-040-112-181	HS0395-40	CHUM	368	530.0	0.2	F	2.9	10	fish scales, unidentified gelatinous material
HS0395-040-112-182	HS0395-40	CHUM	284	243.0	0.1	F	0.4	4.6	unidentified gelatinous material
HS0395-040-112-183	HS0395-40	CHUM	302	268.5	0.1	M	0	4.5	unidentified gelatinous material
HS0395-040-112-184	HS0395-40	CHUM	295	309.0	0.1	F	0.7	7	unidentified gelatinous material
HS0395-040-112-185	HS0395-40	CHUM	276	229.0	0.1	M	0	6	unidentified gelatinous material
HS0395-040-112-186	HS0395-40	CHUM	294	265.0	0.1	F	0.2	5	unidentified gelatinous material
HS0395-040-112-187	HS0395-40	CHUM	280	243.0	0.1	F	0.2	4.8	unidentified gelatinous material
HS0395-040-112-188	HS0395-40	CHUM	280	237.5	0.1	F	0.2	9.2	unidentified gelatinous material
HS0395-040-112-189	HS0395-40	CHUM	310	335.0	0.1	M	0	6.4	unidentified gelatinous material
HS0395-040-112-190	HS0395-40	CHUM	301	285.5	0.1	M	0	4.5	unidentified gelatinous material
HS0395-040-112-191	HS0395-40	CHUM	271	213.0	0.1	M	0	5.5	unidentified gelatinous material
HS0395-040-112-192	HS0395-40	CHUM	288	252.5	0.1	M	0	8.6	unidentified gelatinous material
HS0395-040-112-193	HS0395-40	CHUM	294	229.5	0.1	F	0	3.9	unidentified gelatinous material
HS0395-040-112-194	HS0395-40	CHUM	284	263.5	0.1	F	0.4	8.2	unidentified gelatinous material
HS0395-040-112-195	HS0395-40	CHUM	290	226.0	0.1	M	0	5.8	unidentified gelatinous material
HS0395-040-112-196	HS0395-40	CHUM	325	373.0	0.1	F	0.3	5.8	unidentified gelatinous material
HS0395-040-112-197	HS0395-40	CHUM	285	254.0	0.1	M	0	7	unidentified gelatinous material
HS0395-040-112-198	HS0395-40	CHUM	303	310.0	0.1	F	0.5	9.2	unidentified gelatinous material
HS0395-040-112-199	HS0395-40	CHUM	285	245.5	0.1	M	0	5	unidentified gelatinous material
HS0395-040-112-200	HS0395-40	CHUM	269	217.0	0.1	F	0	4.3	unidentified gelatinous material
HS0395-040-112-201	HS0395-40	CHUM	295	301.5	0.1	M	0	8.5	unidentified gelatinous material
HS0395-040-112-202	HS0395-40	CHUM	280	252.0	0.1	F	0.2	10.7	unidentified gelatinous material
HS0395-040-112-203	HS0395-40	CHUM	271	213.0	0.1	M	0	3.9	unidentified gelatinous material
HS0395-040-112-204	HS0395-40	CHUM	260	193.0	0.1	F	0	3.9	unidentified gelatinous material

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-040-112-205	HS0395-40	CHUM	281	237.5	0.1	F	0.1	4.2	unidentified gelatinous material
HS0395-040-112-206	HS0395-40	CHUM	262	207.5	0.1	F	0.1	6.4	unidentified gelatinous material
HS0395-040-112-207	HS0395-40	CHUM	288	245.5	0.1	M	0	6.3	unidentified gelatinous material
HS0395-040-112-208	HS0395-40	CHUM	293	231.0	0.1	M	0	2.6	unidentified gelatinous material
HS0395-040-112-209	HS0395-40	CHUM	278	224.0	0.1	M	0	3.9	unidentified gelatinous material
HS0395-040-112-210	HS0395-40	CHUM	301	322.0	0.1	M	0	4.5	unidentified gelatinous material
HS0395-040-112-211	HS0395-40	CHUM	283	236.0	0.1	M	0	6.3	unidentified gelatinous material
HS0395-040-112-212	HS0395-40	CHUM	277	252.5	0.1	M	0	6.5	unidentified gelatinous material
HS0395-040-112-213	HS0395-40	CHUM	255	181.0	0.1	M	0	7.1	unidentified gelatinous material
HS0395-040-112-214	HS0395-40	CHUM	279	235.5	0.1	F	0.8	7.3	unidentified gelatinous material
HS0395-040-112-215	HS0395-40	CHUM	296	276.5	0.1	M	0	4.4	unidentified gelatinous material
HS0395-040-112-216	HS0395-40	CHUM	265	196.0	0.1	F	0.2	5.4	unidentified gelatinous material
HS0395-040-112-217	HS0395-40	CHUM	283	245.5	0.1	M	0	5.2	unidentified gelatinous material
HS0395-040-112-218	HS0395-40	CHUM	283	217.5	0.1	F	0.1	4.7	unidentified gelatinous material
HS0395-040-112-219	HS0395-40	CHUM	271	216.5	0.1	M	0	3.3	unidentified gelatinous material
HS0395-040-112-220	HS0395-40	CHUM	296	282.0	0.1	F	0.2	4.9	unidentified gelatinous material
HS0395-040-112-221	HS0395-40	CHUM	307	303.0	0.1	M	0	4.6	unidentified gelatinous material
HS0395-040-112-222	HS0395-40	CHUM	288	259.0	0.1	F	0.2	7.1	unidentified gelatinous material
HS0395-040-112-223	HS0395-40	CHUM	302	306.5	0.1	M	0	6.1	unidentified gelatinous material
HS0395-040-112-224	HS0395-40	CHUM	294	279.0	0.1	M	0	6	unidentified gelatinous material
HS0395-040-112-225	HS0395-40	CHUM	275	236.5	0.1	M	0	4.5	unidentified gelatinous material
HS0395-040-112-226	HS0395-40	CHUM	266	208.0	0.1	F	0.2	7.2	unidentified gelatinous material
HS0395-040-112-227	HS0395-40	CHUM	277	236.5	0.1	F	0.3	5.7	unidentified gelatinous material
HS0395-040-112-228	HS0395-40	CHUM	288	265.0	0.1	M	0	10.2	unidentified gelatinous material
HS0395-040-112-229	HS0395-40	CHUM	296	265.0	0.1	F	0.3	4.6	unidentified gelatinous material
HS0395-040-112-230	HS0395-40	CHUM	278	234.5	0.1	F	0.3	5	unidentified gelatinous material
HS0395-040-112-231	HS0395-40	CHUM	283	270.5	0.1	M	0	6.1	unidentified gelatinous material
HS0395-040-112-232	HS0395-40	CHUM	295	272.0	0.1	M	0	4.3	unidentified gelatinous material
HS0395-040-112-233	HS0395-40	CHUM	292	274.0	0.1	M	0	5.9	unidentified gelatinous material
HS0395-040-112-234	HS0395-40	CHUM	314	301.5	0.1	M	0	4.2	unidentified gelatinous material
HS0395-040-112-235	HS0395-40	CHUM	273	230.0	0.1	F	0.2	3.7	unidentified gelatinous material
HS0395-040-112-236	HS0395-40	CHUM	300	289.5	0.1	F	0.4	6.1	unidentified gelatinous material
HS0395-040-112-237	HS0395-40	CHUM	258	187.0	0.1	M	0	2.6	unidentified gelatinous material
HS0395-040-112-241	HS0395-40	CHUM	278	224.5	0.1	F	0.4	3.7	unidentified gelatinous material
HS0395-041-112-239	HS0395-41	CHUM	325	330.0	0.1	M	0	4.6	unidentified gelatinous material
HS0395-041-112-240	HS0395-41	CHUM	325	331.0	N/A	M	0	2.2	unidentified gelatinous material
HS0395-017-115-025	HS0395-17	COHO	501	1027.5	2.1	M	N/A	16.18	1 myctophid , myctophid & squid remains
HS0395-017-115-032	HS0395-17	COHO	391	618.5	1.1	M	N/A	0.76	unidentified material
HS0395-004-108-004	HS0395-4	PINK	296	266.0	0.1	F	2.5	5.4	N/A
HS0395-004-108-005	HS0395-4	PINK	312	275.5	0.1	F	3	4	N/A

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-004-108-006	HS0395-4	PINK	363	439.0	0.1	M	0	7.4	N/A
HS0395-004-108-007	HS0395-4	PINK	393	508.5	0.1	M	0	0	
HS0395-004-108-008	HS0395-4	PINK	N/A	510.0	0.1	M	0	0	
HS0395-005-108-022	HS0395-5	PINK	324	N/A	0.1	F	N/A	N/A	N/A
HS0395-017-108-023	HS0395-17	PINK	282	184.0	0.1	M	N/A	0.5	unidentified material
HS0395-017-108-042	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-043	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-044	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-045	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-046	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-047	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-048	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-049	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-017-108-050	HS0395-17	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-018-108-051	HS0395-18	PINK	342	386.0	0.1	M	0	2.3	unidentified material
HS0395-021-108-052	HS0395-21	PINK	381	621.0	0.1	M	0	2.6	unidentified material
HS0395-029-108-053	HS0395-29	PINK	363	511.5	0.1	F	3.9	3.1	unidentified material
HS0395-029-108-054	HS0395-29	PINK	382	645.0	0.1	F	2.7	0	
HS0395-029-108-055	HS0395-29	PINK	391	656.0	0.1	M	0	4	amphipod remains
HS0395-030-108-056	HS0395-30	PINK	331	309.0	0.1	F	3.1	2.8	unidentified material
HS0395-030-108-057	HS0395-30	PINK	338	374.0	0.1	F	2.7	5.3	small squid,unidentified material
HS0395-030-108-058	HS0395-30	PINK	334	254.5	0.1	F	3.3	4.9	small squid remains.
HS0395-030-108-059	HS0395-30	PINK	328	334.0	0.1	M	0	2.1	small squid, unidentified material
HS0395-030-108-060	HS0395-30	PINK	315	325.5	0.1	F	2.2	3	unidentified material
HS0395-030-108-061	HS0395-30	PINK	325	312.0	0.1	M	0	3.3	squid remains, unidentified material
HS0395-030-108-062	HS0395-30	PINK	320	296.5	0.1	F	2.1	1.9	pteropods, unidentified material
HS0395-038-108-063	HS0395-38	PINK	306	252.5	0.1	M	0	3	trace pteropods
HS0395-038-108-064	HS0395-38	PINK	338	318.0	0.1	F	3.5	3.1	unidentified material
HS0395-038-108-065	HS0395-38	PINK	323	275.0	0.1	M	0	3.4	unidentified material
HS0395-038-108-066	HS0395-38	PINK	332	314.0	0.1	F	3.1	3.6	unidentified material
HS0395-038-108-067	HS0395-38	PINK	338	318.0	0.1	M	0	0	
HS0395-038-108-068	HS0395-38	PINK	333	364.0	0.1	F	3.1	3.9	unidentified material
HS0395-038-108-069	HS0395-38	PINK	308	280.0	0.1	F	2.2	0.3	unidentified material
HS0395-038-108-071	HS0395-38	PINK	339	308.0	0.1	F	3.4	1.7	unidentified material
HS0395-038-108-077	HS0395-38	PINK	296	235.5	0.1	F	1.6	4.5	unidentified material
HS0395-038-108-079	HS0395-38	PINK	326	303.0	0.1	M	0	2.2	unidentified material
HS0395-039-108-088	HS0395-39	PINK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HS0395-039-108-089	HS0395-39	PINK	312	297.5	0.1	F	2.1	5.2	pteropods
HS0395-039-108-090	HS0395-39	PINK	312	312.0	0.1	F	2.5	2.4	pteropods
HS0395-040-108-093	HS0395-40	PINK	301	277.5	0.1	F	2.2	4.8	trace pteropods, unidentified material
HS0395-040-108-094	HS0395-40	PINK	314	290.5	0.1	F	2.5	7.6	unidentified material
HS0395-040-108-095	HS0395-40	PINK	328	314.5	0.1	M	0	7.1	trace pteropods, unidentified material

Table 2. Biological data collected for each salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Fish Number	Station ID	Species	Fork Length (mm)	Whole Body Weight (g wet)	Age	Sex	Gonad Weight (g wet)	Stomach Content Weight (g wet)	Description of Stomach Contents
HS0395-040-108-096	HS0395-40	PINK	330	380.5	0.1	M	0	10.1	trace pteropods, unidentified material
HS0395-040-108-097	HS0395-40	PINK	299	262.0	0.1	F	2.1	4	trace pteropods, unidentified material
HS0395-040-108-098	HS0395-40	PINK	317	328.5	0.1	F	2.9	3.8	amphipod remains, unidentified material
HS0395-040-108-099	HS0395-40	PINK	313	296.5	0.1	M	0	8.3	pteropods, unidentified material
HS0395-040-108-100	HS0395-40	PINK	287	235.0	0.1	M	0	3.3	amphipod remains, unidentified material
HS0395-040-108-101	HS0395-40	PINK	337	346.0	0.1	M	0.3	9	pteropods
HS0395-040-108-102	HS0395-40	PINK	308	291.0	0.1	M	0	5.4	trace pteropods, amphipod remains, unidentified material
HS0395-040-108-103	HS0395-40	PINK	322	307.5	0.1	M	0	5.9	amphipod remains,unidentified material
HS0395-040-108-104	HS0395-40	PINK	304	284.5	0.1	M	0	6.6	amphipod remains, trace pteropods, unidentified material
HS0395-040-108-105	HS0395-40	PINK	322	312.5	0.1	M	0	2.3	trace pteropods, unidentified material
HS0395-041-108-238	HS0395-41	PINK	334	236.0	0.1	F	3	1.6	unidentified gelatinous material
HS0395-004-118-003	HS0395-4	SOCKEYE	295	274.5	9.9	F	4.5	1	N/A
HS0395-004-118-009	HS0395-4	SOCKEYE	422	833.5	2.2	M	0	0.5	trace euphausiids
HS0395-004-118-010	HS0395-4	SOCKEYE	389	656.0	1.1	M	0	0	
HS0395-004-118-011	HS0395-4	SOCKEYE	449	1123.0	1.2	M	0	0	
HS0395-004-118-012	HS0395-4	SOCKEYE	404	736.5	2.1	F	0	0	
HS0395-004-118-013	HS0395-4	SOCKEYE	418	842.5	N/A	F	8.5	0	
HS0395-004-118-014	HS0395-4	SOCKEYE	386	604.0	1.2	N/A	N/A	N/A	N/A
HS0395-004-118-015	HS0395-4	SOCKEYE	393	751.0	9.9	N/A	N/A	N/A	N/A
HS0395-004-118-016	HS0395-4	SOCKEYE	421	825.0	2.2	N/A	N/A	N/A	N/A
HS0395-004-118-017	HS0395-4	SOCKEYE	460	943.0	2.2	N/A	N/A	N/A	N/A
HS0395-004-118-018	HS0395-4	SOCKEYE	413	737.5	2.2	N/A	N/A	N/A	N/A
HS0395-004-118-019	HS0395-4	SOCKEYE	407	762.5	1.2	N/A	N/A	N/A	N/A
HS0395-004-118-020	HS0395-4	SOCKEYE	417	903.5	1.2	N/A	N/A	N/A	N/A
HS0395-004-118-021	HS0395-4	SOCKEYE	400	669.5	9.9	N/A	N/A	N/A	N/A
HS0395-017-118-034	HS0395-17	SOCKEYE	415	870.0	9.9	F	N/A	0	
HS0395-017-118-035	HS0395-17	SOCKEYE	430	932.0	1.2	M	N/A	0.42	unidentified material
HS0395-017-118-036	HS0395-17	SOCKEYE	402	752.0	1.2	F	N/A	0	
HS0395-017-118-037	HS0395-17	SOCKEYE	402	702.0	1.2	F	N/A	1.78	amphipod remains, pteropods
HS0395-017-118-038	HS0395-17	SOCKEYE	409	780.0	9.9	M	N/A	N/A	N/A
HS0395-017-118-039	HS0395-17	SOCKEYE	416	768.0	1.2	F	N/A	0	
HS0395-017-118-040	HS0395-17	SOCKEYE	440	997.0	1.3	M	N/A	2.26	unidentified material
HS0395-017-118-041	HS0395-17	SOCKEYE	403	727.0	1.1	F	N/A	0	

Table 3. Physical oceanographic data collected on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Station ID	IOS CTD No.	Region	Date	Time UTC	Latitude (°N)	Longitude (°W)	SST (°C)	SSS (ppt)	SSS Bottle (ppt)	NO_3 (µmol / L)	SiO_4 (µmol / L)	PO_4 (µmol / L)
HS0395-1	N/A	Offshore	25-Mar-95	N/A	50.527	134.391	N/A	N/A	32.476	7.9	11.7	0.97
HS0395-2	9511-2	Offshore	25-Mar-95	11:09	50.658	134.840	6.666	32.468	32.472	9.6	14.6	1.02
HS0395-3	9511-3	Offshore	26-Mar-95	03:57	50.410	138.370	6.674	32.534	32.531	8.6	11.8	1.02
HS0395-4	9511-4	Offshore	26-Mar-95	20:57	50.393	139.205	6.680	32.534	32.539	8.9	13.0	0.93
HS0395-5	9511-5	Offshore	27-Mar-95	02:03	50.388	140.039	6.537	32.574	32.569	9.1	12.8	1.06
HS0395-CTD-6	9511-6	Offshore	27-Mar-95	08:01	50.388	141.080	5.844	32.680	32.689	12.0	15.6	1.10
HS0395-6	9511-7	Offshore	27-Mar-95	15:43	50.267	142.465	6.187	32.710	32.713	11.4	15.1	1.14
HS0395-7	9511-8	Offshore	27-Mar-95	20:09	50.303	143.020	5.768	32.721	32.723	13.0	17.4	1.28
HS0395-8	9511-9	Offshore	28-Mar-95	03:39	50.159	143.581	5.776	32.733	32.740	12.8	18.0	1.26
HS0395-CTD-10	9511-10	Offshore	28-Mar-95	07:57	50.119	144.228	5.971	32.747	32.749	13.1	18.9	1.29
HS0395-9	9511-11	Offshore	28-Mar-95	16:52	50.148	145.828	5.450	32.731	32.725	13.9	20.2	1.37
HS0395-10	9511-12	Offshore	28-Mar-95	23:59	50.003	144.977	5.680	32.744	32.742	13.8	20.5	1.36
HS0395-11	9511-13	Offshore	29-Mar-95	04:14	49.723	144.998	5.714	32.755	32.749	13.5	20.0	1.31
HS0395-12	9511-14	Offshore	29-Mar-95	15:06	49.137	144.500	6.281	32.771	32.765	12.5	18.7	1.27
HS0395-13	9511-15	Offshore	29-Mar-95	22:00	48.682	144.325	6.498	32.772	32.764	11.7	17.5	1.31
HS0395-14	9511-16	Offshore	30-Mar-95	03:22	48.448	143.903	6.621	32.784	32.772	11.5	17.3	1.07
HS0395-CTD-17	9511-17	Offshore	30-Mar-95	07:24	48.064	143.850	6.454	32.728	32.730	11.7	19.4	1.08
HS0395-15	9511-18	Offshore	30-Mar-95	15:10	47.230	143.489	7.283	32.802	32.810	9.8	14.8	1.08
HS0395-16	9511-19	Offshore	30-Mar-95	21:03	46.876	142.815	7.584	32.830	32.821	9.5	14.2	1.09
HS0395-17	9511-20	Offshore	31-Mar-95	01:57	46.729	142.255	7.431	32.725	32.734	8.9	14.0	1.00
HS0395-CTD-21	9511-21	Offshore	01-Apr-95	06:21	45.240	141.030	8.198	32.831	32.833	8.1	11.7	0.95
HS0395-18	9511-22	Offshore	01-Apr-95	18:51	44.736	140.162	8.920	32.871	32.881	6.1	9.2	1.08
HS0395-19	9511-23	Offshore	01-Apr-95	23:30	44.457	139.707	9.373	32.949	32.935	4.2	6.9	0.58
HS0395-20	9511-24	Offshore	02-Apr-95	03:37	44.199	139.265	9.390	32.933	32.923	4.0	6.6	0.66
HS0395-CTD-25	9511-25	Offshore	02-Apr-95	06:30	43.977	138.928	9.158	32.899	32.893	5.0	7.9	0.96
HS0395-21	9511-26	Offshore	02-Apr-95	17:27	43.308	137.846	9.805	32.828	32.836	2.9	6.1	0.63
HS0395-23	9511-27	Offshore	03-Apr-95	17:17	42.833	136.376	10.437	32.922	32.913	2.7	5.7	0.49
HS0395-24	9511-28	Offshore	03-Apr-95	21:34	42.439	136.019	10.534	32.883	32.881	1.4	5.4	0.82
HS0395-25	9511-29	Offshore	03-Apr-95	03:42	41.890	135.689	10.455	32.844	32.851	1.4	5.7	0.52
HS0395-CTD-30	9511-30	Offshore	04-Apr-95	06:52	41.441	135.631	10.678	32.820	32.821	1.0	7.4	0.49
HS0395-26	9511-31	Offshore	04-Apr-95	17:42	39.965	135.375	12.830	33.272	32.248	0.0	4.1	0.33
HS0395-27	9511-32	Offshore	04-Apr-95	22:35	40.493	135.116	11.631	33.022	33.032	0.0	3.7	0.34
HS0395-28	9511-33	Offshore	05-Apr-95	02:51	40.940	134.995	11.490	33.019	33.032	0.2	4.2	0.37
HS0395-29	9511-34	Offshore	05-Apr-95	17:26	42.838	134.790	10.153	32.833	32.834	2.3	5.5	0.56
HS0395-30	9511-35	Offshore	05-Apr-95	22:15	43.355	134.723	10.204	32.853	32.850	1.8	6.0	0.53

Table 3. Physical oceanographic data collected on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Station ID	IOS CTD No.	Region	Date	Time UTC	Latitude (°N)	Longitude (°W)	SST (°C)	SSS (ppt)	SSS Bottle (ppt)	NO_3 (µmol / L)	SiO_4 (µmol / L)	PO_4 (µmol / L)
HS0395-31	9511-36	Offshore	06-Apr-95	02:49	43.858	134.718	10.134	32.855	32.851	2.2	5.4	0.58
HS0395-CTD-37	9511-37	Offshore	06-Apr-95	06:08	43.520	134.237	9.829	32.816	32.821	3.2	6.3	1.07
HS0395-32	9511-38	Offshore	06-Apr-95	17:37	42.611	132.873	10.986	32.862	32.864	0.5	4.4	0.50
HS0395-33	9511-39	Offshore	06-Apr-95	22:36	42.244	132.307	11.190	32.864	32.862	0.1	4.4	0.40
HS0395-34	9511-40	Offshore	07-Apr-95	03:25	42.743	132.008	10.402	32.801	32.809	2.0	5.4	0.53
HS0395-CTD-41	9511-41	Offshore	07-Apr-95	06:10	43.079	131.866	10.328	32.813	32.815	2.1	5.1	0.56
HS0395-35	9511-42	Offshore	07-Apr-95	18:05	44.633	131.859	9.790	32.702	32.705	4.7	6.1	0.65
HS0395-36	9511-43	Offshore	07-Apr-95	21:16	44.870	131.838	9.988	32.705	32.708	3.4	5.4	0.53
HS0395-37	9511-44	Offshore	08-Apr-95	02:51	45.415	131.919	9.390	32.707	32.707	3.5	5.9	0.66
HS0395-CTD-45	9511-45	Offshore	08-Apr-95	06:03	45.722	131.758	9.144	32.724	32.726	4.5	7.2	0.85
HS0395-38	9511-46	Offshore	08-Apr-95	18:37	46.723	131.037	8.956	32.642	32.644	4.2	7.0	0.69
HS0395-39	9511-47	Offshore	08-Apr-95	23:48	47.268	131.098	8.223	32.563	32.564	5.4	8.7	0.79
HS0395-40	9511-48	Offshore	09-Apr-95	03:28	47.609	131.045	8.219	32.591	32.585	5.5	8.5	0.79
HS0395-CTD-49	9511-49	Offshore	09-Apr-95	06:13	47.872	131.056	7.752	32.496	32.496	6.6	10.3	0.92
HS0395-41	9511-50	Offshore	09-Apr-95	17:23	49.049	131.173	7.875	32.488	32.489	6.4	9.3	0.78
HS0395-42	9511-51	Offshore	09-Apr-95	20:32	49.041	130.751	8.223	32.514	32.512	5.4	8.6	0.73
HS0395-43	9511-52	Offshore	10-Apr-95	00:15	49.063	130.227	8.869	32.395	32.403	3.9	6.7	0.67
HS0395-44	9511-53	Offshore	10-Apr-95	03:19	49.101	129.897	8.857	32.377	32.383	4.0	7.3	0.68

Table 4. Zooplankton data from bongo tows on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

Station ID	CTD Cons. No.	Date	Latitude (°N)	Longitude (°W)	Bottom Depth (m)	Target Depth (m)	Start time PST	End time PST	Tow Duration	Wire Angle (°)	Wire Out (m)	Volume Seived (m^3)	Plankton Weights by Size Fraction (g dry / 1000 m^3) 8.0 mm	1.7 mm	1.0 mm	0.25 mm	Total
HS0395-CTD-1	9511-1	26-Mar-95	50.527	134.391	3,403	381	03:10	03:25	0:15	35	465	373	0.19	0.00	0.51	0.80	1.50
HS0395-CTD-6	9511-6	27-Mar-95	50.392	141.072	3,933	416	00:50	01:12	0:22	30	480	269	3.69	0.48	0.04	0.22	4.43
HS0395-CTD-10	9511-10	27-Mar-95	50.165	144.187	4,126	386	23:00	23:41	0:41	35	471	902	0.43	0.20	0.03	0.22	0.89
HS0395-CTD-17	9511-17	29-Mar-95	48.097	143.842	4,449	419	22:54	23:11	0:17	30	484	327	0.95	0.03	0.00	0.00	0.98
HS0395-17	9511-20	30-Mar-95	46.560	142.288	4,497	421	22:34	22:52	0:18	30	486	276	3.95	0.00	0.00	0.18	4.13
HS0395-CTD-21	9511-21	31-Mar-95	45.245	141.048	4,483	416	23:10	23:27	0:17	30	480	303	1.06	0.30	0.16	0.20	1.72
HS0395-CTD-25	9511-25	01-Apr-95	43.970	138.928	4,193	416	23:27	23:44	0:17	30	480	330	0.42	0.21	0.00	1.15	1.79
HS0395-CTD-30	9511-30	03-Apr-95	41.440	135.633	3,994	416	23:24	23:38	0:14	30	480	301	0.70	0.33	0.33	0.73	2.09
HS0395-CTD-37	9511-37	05-Apr-95	43.540	134.250	3,858	435	22:40	22:56	0:16	25	480	355	0.00	0.59	0.48	0.70	1.77
HS0395-CTD-41	9511-41	06-Apr-95	43.085	132.002	3,734	435	22:42	22:59	0:17	25	480	253	N/A	N/A	N/A	N/A	N/A
HS0395-CTD-45	9511-45	07-Apr-95	45.718	131.743	3,377	435	22:35	22:51	0:16	25	480	299	N/A	N/A	N/A	N/A	N/A
HS0395-CTD-49	9511-49	08-Apr-95	47.877	131.063	2,837	435	22:44	22:59	0:15	25	480	178	N/A	N/A	N/A	N/A	N/A

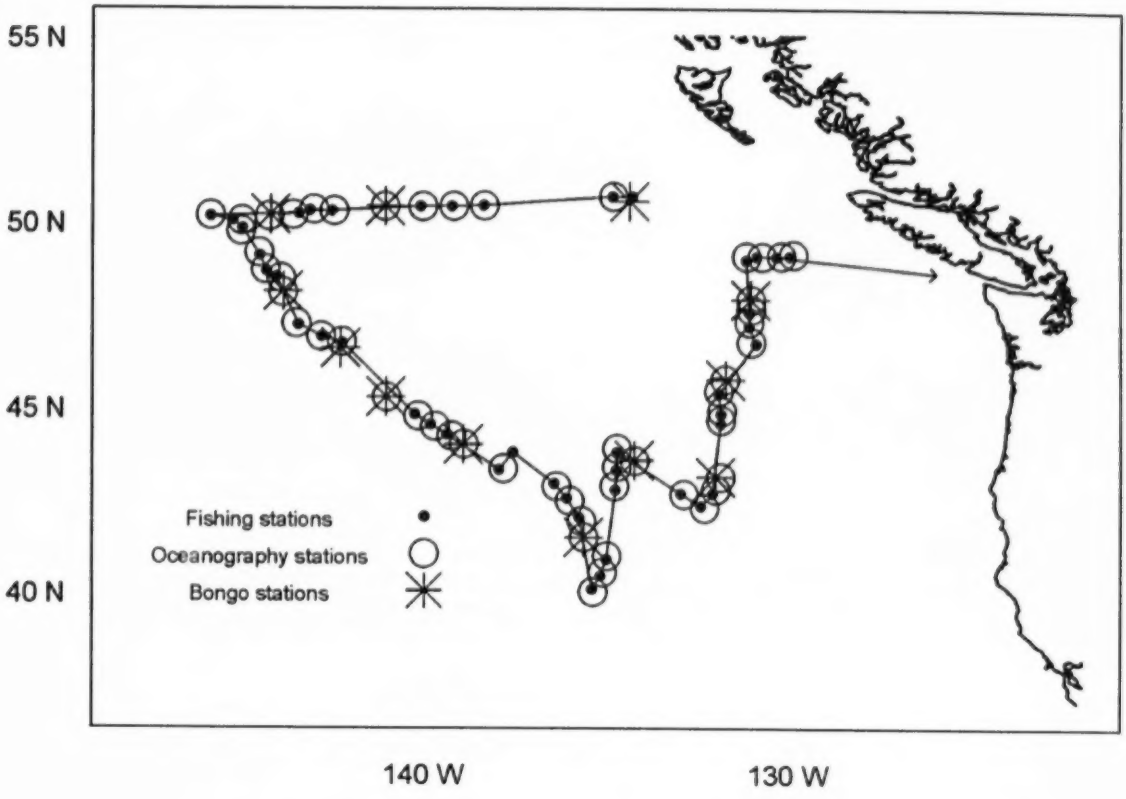

Figure 1. Cruise track of the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995, and the fish, zooplankton and oceanographic sampling stations.

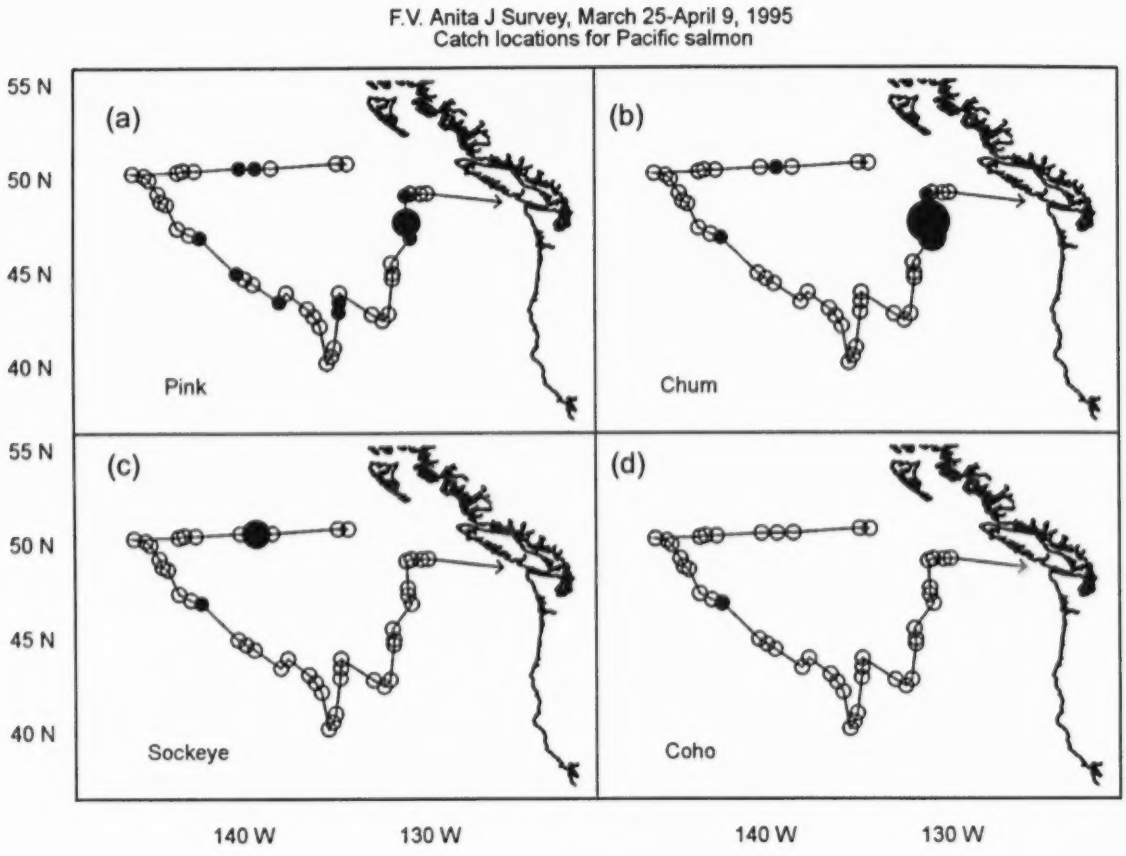

Figure 2. Catch locations for Pacific salmon on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.

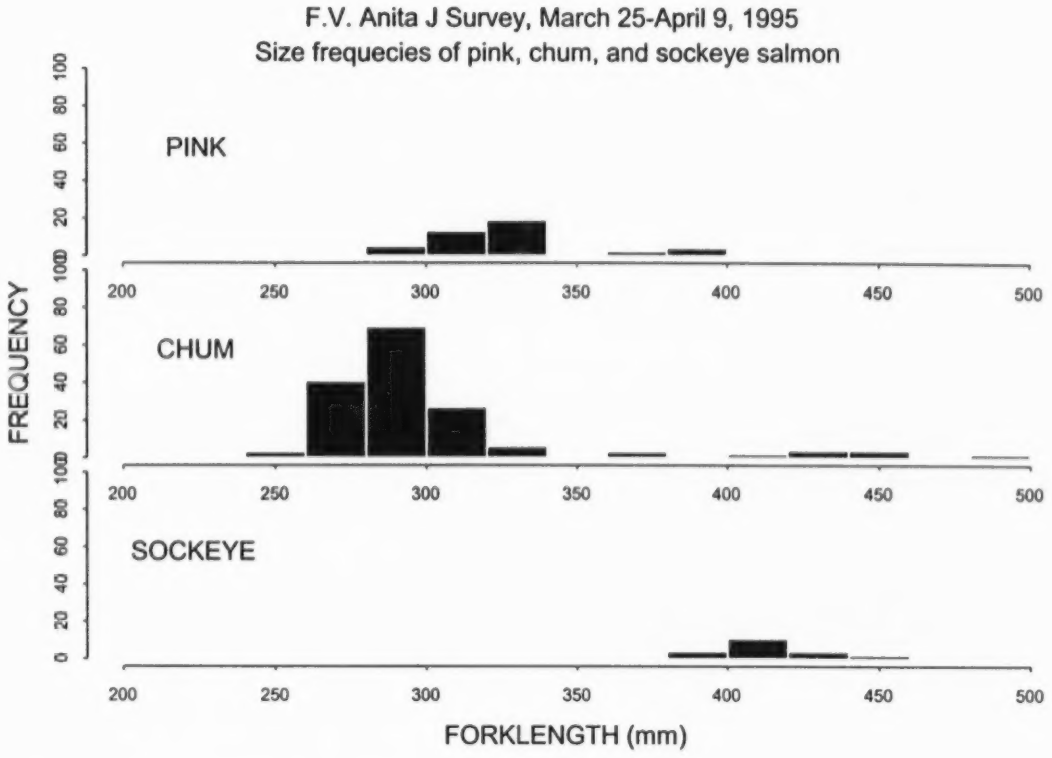

Figure 3. Size frequencies of pink, chum and sockeye salmon caught on the F.V. Anita J. survey to the Gulf of Alaska, March 25 - April 9, 1995.